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(54) **A/d converter and open detection method thereof**

(57) An A/D converter includes a sampling capacitor that accumulates a charge according to an input voltage, a first initialization switch that initializes the sampling capacitor, a sample hold switch that switches a connection

state of an external input terminal and the sampling capacitor, and a second initialization switch that initializes a charge accumulated in an input node via a resistor, the input node connecting the external input terminal and the sample hold switch.

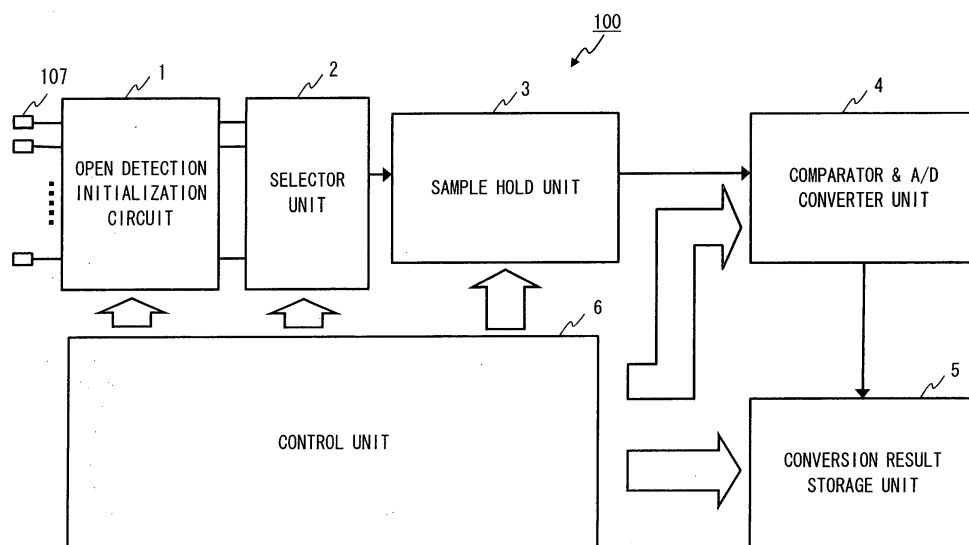


Fig. 1



EUROPEAN SEARCH REPORT

Application Number
EP 10 01 1247

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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X	US 6 396 426 B1 (BALARD ERIC [FR] ET AL) 28 May 2002 (2002-05-28) * column 5, lines 51-54; claims 7,12; figures 2,4 * * column 6, lines 25-26 * * column 6, lines 10-13 * * column 6, lines 12-13 * * column 6, lines 16-18 * * column 9, lines 41-43 * * column 9, lines 47-50 * * column 9, lines 51-53 * * column 9, lines 57-64 * -----	8,9	
			TECHNICAL FIELDS SEARCHED (IPC)
			H03M
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 30 May 2012	Examiner Galardi, Leonardo
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 01 1247

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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